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# PUBLIC HEALTH REPORTS

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## EPIDEMIC CEREBROSPINAL MENINGITIS.

The current prevalence of epidemic cerebrospinal meningitis in so far as data are available will be found on pages 703-704.

### VACCINE VIRUS.

#### SHOULD ALWAYS BE KEPT ON ICE.

Vaccine virus rapidly loses its potency unless kept cool. In many drug stores vaccine is kept in a drawer back of the counter instead of in the ice box. Under these conditions the vaccine is likely to be worthless and not to produce successful vaccination. In buying vaccine one should ascertain that it has been properly kept.

It is a matter of common knowledge that biologic products should be kept in a cool place. The United States Pharmacopœia, ninth decennial revision, specifies temperatures between 4.5° and 15° C. for diphtheria and tetanus antitoxin and vaccine virus—the three official products of this class. What is not generally appreciated is the difference between these products in this respect. The change in the antitoxins, serums, and such products as typhoid vaccine is a gradual chemical deterioration, since these contain no living matter; in the case of the antitoxins it can be demonstrated that at reasonable temperatures and within reasonable times the products are not rendered valueless, nor harmful—simply a somewhat larger amount must be used to produce a given effect.

With vaccine virus we have an altogether different situation. The virus is a living thing, suspended in a medium without food for multiplication, and like most minute living things which do not enter the spore state, death rapidly takes place unless the life processes are retarded by refrigeration. No definite and certain limits can be placed on the duration of the life of the vaccine virus at different temperatures, for we know neither the number of living micro-organisms of vaccinia originally present nor the minimum number necessary to produce the characteristic vaccination; both are undoubtedly variable. As the virus leaves the manufacturer's hands it is practically always potent. It is a fact, however, that as commonly cared for in drug stores the vaccine virus of commerce deteriorates rapidly.

Virus of various manufacturers purchased at drug stores has been found, though within the stamped expiration date, to give less than

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